Product Catalog 2011

Your Complete High Voltage Solution

Transformers (Oil-Filled)
Transformers designed specifically for harsh electrical and environmental demands. Hermetically sealed for long service life. Cost-effective and compact. State-of-the-art, commercial quality

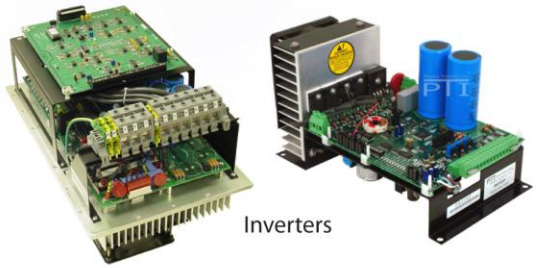
Transformers (Dry)
Designed specifically for harsh electrical and environmental demands imposed by continuous duty corona discharge ozone generation and electrostatic applications. Cost-effective and compact. Vacuum impregnation sealed for long service life.

Inverters
New, processor based, second-generation, pulse-density modulation (PDM) enhanced, single-phase inverters, providing linear plasma control with a turn-down to 1%. Higher power capacity and enhanced controls. An automatic bus-voltage compensation circuit to stabilize high-voltage output.

Electronic Supplies
Transformers (AC) and power supplies (DC) for smaller ozone applications. Designed for harsh electrical and environmental demands. Small, compact and reliable.

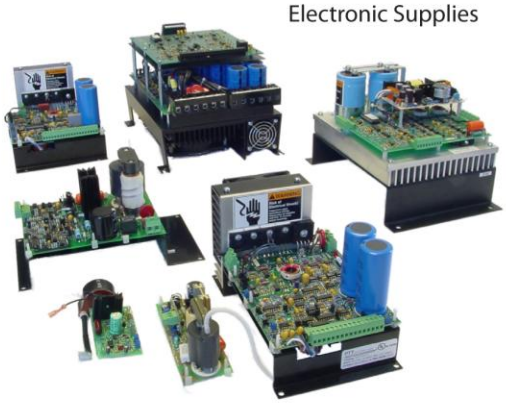
Transformers (Oil-Filled)

Transformers (Dry)



Inverters

Electronic Supplies



OEM Components

(262) 637-7180
Plasma Technics, Inc.
SPECIALISTS IN OZONE TECHNOLOGIES
www.plasmatechnics.com

Table of Contents

SSD110 Solid State Drive ..... **page 4**

DAT210 Digital Auto Tune Inverter..... **page 6**

DAT210 Inverter Assembly ..... **page 9**

SSD210 12DC/AC Inverter ..... **page 12**

SSD310 Solid State Drive ..... **page 14**

Unico 1105 Inverter ..... **page 16**

Electronic Ozone Transformer
ET and ETI series 50 & 100 watt ..... **page 20**

Solid State Ozone Power Supply 10 watt... **page 23**

Severe-Application Ozone Transformers
Oil 70 – 250 watt ..... **page 25**

Solid State Oil Transformers
Oil 50 – 250 watt..... **page 27**

Severe Application Ozone Transformers
Oil 1kva – 16kva ..... **page 29**

Severe Application Ozone Transformers
Dry 35 – 150 watt ..... **page 31**

Resonant System Components
500 – 20kva, 1kHz to 35 kHz ..... **page 34**

Plasma Technics, Inc.®

PTI 3

1.8kva – 3.6kva / high frequency

SSD110 - Solid State Drive

The SSD110 is a new, second-generation, **Pulse Density Modulation (PDM)** enhanced, single-phase inverter providing linear plasma control with a turn-down to 10%. **Higher power** capacity, enhanced controls, improved internal **fault protection** and **identical mounting** are the product's cornerstones. With twice the usable power level of its predecessor, an extended frequency range and onboard controls to simplify installation, the new SSD110 is a great value. An **automatic buss voltage compensation** circuit stabilizes the high voltage output. PTI also has specifically designed transformers to mate with the SSD product series to provide a **complete high voltage solution.**

Applications:

- Ozone system variable frequency & voltage drive, NOx Conversion and Eximer Lamp supplies.
- Corona Treatment and Static Eliminator systems.
- Military applications requiring 400 hz (cycles per second).
- Spindle-drive supplies requiring frequencies higher than normal PWM inverters can supply.
- Variable-Speed Single-phase AC motor supplies, DC to Single-phase output conversion.

Features:

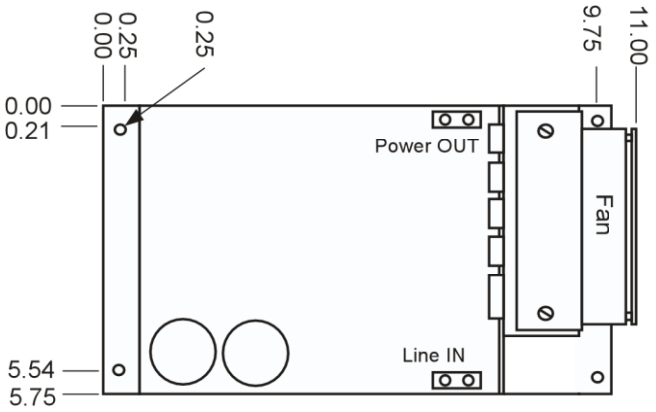
- Pulse Density Modulation (PDM) for **linear plasma control** vs. command signal. Precision ozone level control to minimize bromates.
- Normal frequency range from **5hz to 30khz**, adjustable with 10-turn trimmer.
- Selectable maximum frequency and maximum voltage at desired operating frequency.
- Full pulse-by-pulse current limit control for all power output devices for **reliable operation**.
- **Master/Slave** configuration jumper for multiple unit synchronizing via single controls.
- Selectable **automatic output compensation** for input-line voltage variations.
- Easy and complete computer and PLC interfacing; **4/20ma or 0-10v** for Freq. & PDM.
- Can accommodate either 0-5v or 0-10v full-scale input signal levels.
- Output ON / OFF control using toggle switch or Push On / Push Off buttons.
- Buffered TTL status signals for 'Output Active' and 1x clock for full PLC integration needs.
- An extra unused op amp is available for customers' custom-circuit tailoring needs.
- Short input power loss **ride-through** stabilizes performance during line-voltage fluctuations.

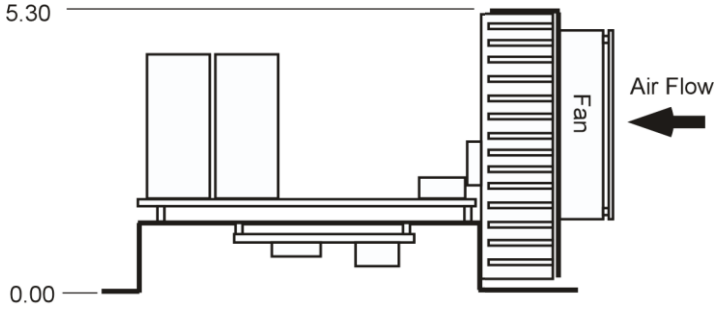
Controls:

Total flexibility built in. Choose from: Onboard potentiometers, remote pots, 4/20ma or 0-10v control of **PDM** and **Frequency**. Automatic fault shutdown if control loop is broken. A PLC voltage or current source can replace the adjustments normally obtained by potentiometers. Solid-state logic provides safety interlock for ON / OFF and restart

lock-out in the event of power loss. A user- selectable output compensation circuit maintains a relatively constant primary voltage as the input line-voltage fluctuates. Customer configurable op. amp. inputs are available at the barrier strip to enable customers the ability to scale, invert, mix and level shift control signals if necessary.

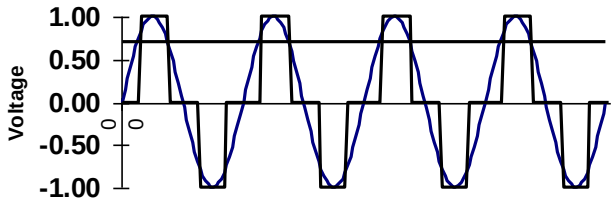
Installation Drawing



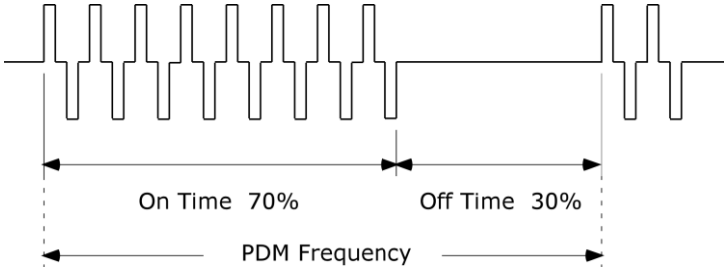


Example SSD110 Outputs:

Full Frequency / Full RMS Voltage



Typical PDM Waveform



Sizing:

Part Number	Device Rating/Phase (ARMS)	Inverter Output/Phase (ARMS)	Output Voltage (VRMS)	Output Power (KVA)	PTI Transformers /Leg
SSD110/15	25.0	15.0	240 / 120	3.6 / 1.8	1-HLHxx302/D230 3-HLHxx102/D115

Input specifications:

AC input 90 to 264 (VRMS) single-phase, 50/60hz. DC input voltage 120 to 373 (VDC).

Forced cooling may be required in addition to the provided fan, and is to be provided by customer.
Consult factory for pricing and availability of unlisted models. Prices are subject to change without notice.

250w - 4kw / 50hz - 30khz

DAT210 – Digital Auto-Tune Inverter

The DAT210 is a new **Microcontroller** design that automatically determines the optimum system operating frequency (resonance). Years in the making, this technology will, for the first time, make high-efficiency self optimizing systems available to everyone. This single-phase inverter provides a **linear** means to adjust corona by using Pulse Density Modulation (PDM), with frequencies up to 30khz. This control scheme allows the inverter to use the full potential of the IGBTs by reducing the usual high-frequency switching losses. **Automatic buss-voltage compensation** stabilizes the output as power line conditions change. PTI has specifically designed transformers to mate with the DAT210, thereby providing a **complete high- voltage solution**

Applications:

- Ozone system variable-frequency voltage drive and Pulse Density Modulation.
- Non-thermal plasma or cold plasma systems.
- Applications requiring good plasma coverage at extreme turn down, such as 1%.
- Corona Treatment and Static Eliminator systems.
- High-frequency, high-current supplies for laboratory use.
- DC to Single-phase output conversion for crane and gantry lighting.

Features:

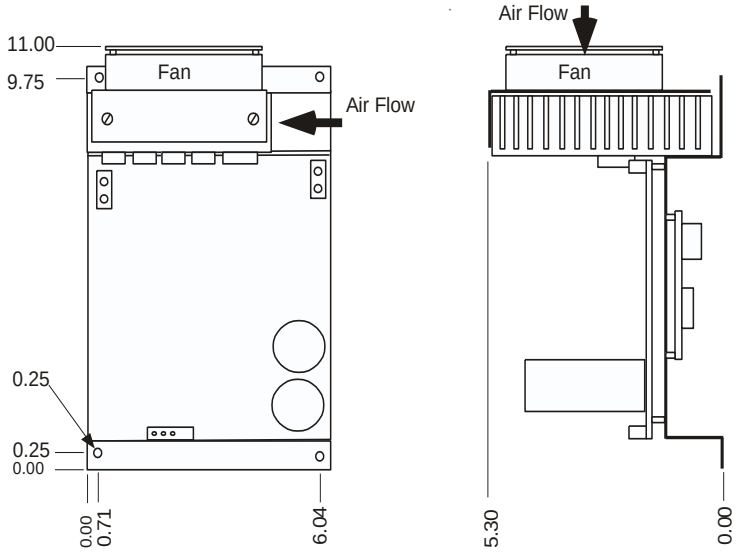
- **Microcontroller** design provides unprecedented control integration. Formerly unmanageable in large systems, **automatically tuning** maintains **maximum system efficiency** and holds **power constant** as system conditions that effect performance may drift.
- Selections for full automatic system tuning, semi-automatic and manual modes.
- Advanced power control via **Pulse Density Modulation (PDM)** yields linear power (Ozone) output vs. command signal, even at high turn-down. This is only possible when PDM is used.
- Extensive two tear fault enunciation **maximizes up-time** and simplifies service diagnostics. Latched fault indicators retain fault status until serviced.

Features Continued:

- User-adjustable HIGH and LOW **load-current bracketing**. Either high current or low current produce a fault which is reported to the terminal strip as well as LEDs, which can then be handled as a soft fault or hard fault. Soft means a user-provided PLC can decide what action is taken before the inverter is disengauged. A hard fault will automatically provide an OFF command to disengage the inverter output.
- Pulse Width and Frequency control in manual mode provide for complete system flexibility.
- **Onboard potentiometers** to control frequency, power (PDM), and output voltage (Pulse Width) can be jumpered in or out individually, if off-board control is desired.
- Inputs easily interface to PLC or computer. **4-20 ma input** or 0-20 ma control of power (PDM) for simple and linear ORP interface, if desired. Also, jumper configurability for 0-10vdc allows interfacing to all common closed- loop control devices. Frequency and Voltage (Pulse Width) optionally controlled via 0 – 10vdc.
- Additional user-terminal strip interfaces: Output ON (implies no faults); scaled buss volts; scaled buss current; 1x inverter clock frequency, soft / (latched) hard fault.
- Safety lockouts and automatic-fault shutdown should short-circuit or over-temperature conditions occur. **Fault** status is latched and is reported via **LEDS** to aid technicians. Indicators include: Output ON, Instantaneous, and long-term over current, over temp.
- PDM, Voltage and Frequency potentiometers have their own jumper selection for on board control if desired.
- **Push-On, Push-Off** or toggle-switch control, inputs and simulates contact logic for simple management of ON/OFF function.
- **Buss-Voltage Compensation** maintains nearly constant output voltage should line voltage drift. Compensation is automatically scaled for 120v and 240v operation.
- **Control connections** of the essential I/O functions are the **same** as the SSD110 and Plasma Block®.
- Full **pulse-by-pulse** current limit control for all power output devices for reliable operation.
- Short input **power loss ride-through** stabilizes performance during line-voltage fluctuations.
- All control connections are **fully isolated** from power line reference to enable simple and safe connection to other equipment.
- Normal frequency range of 50hz, adjustable to 30khz with built-in IGBT protection circuits.

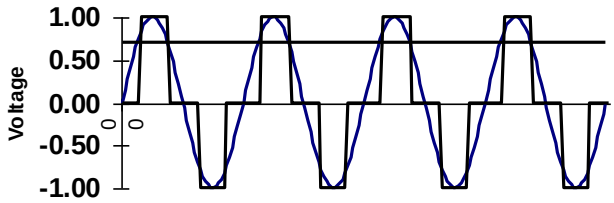
Military grade conformal coating eliminates problems associated with condensation and mold as well as greatly retarding damaged caused by accidental ozone exposure.

Installation Drawing

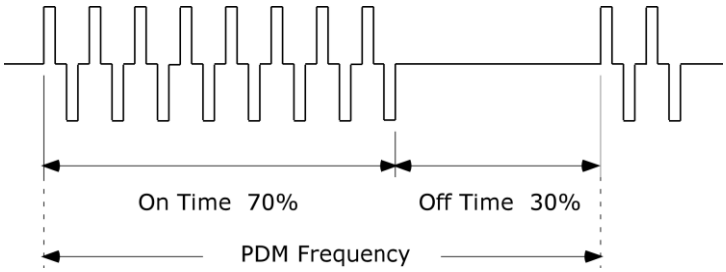


Example DAT210 Outputs:

Full Frequency / Full RMS Voltage



Typical PDM Waveform



Sizing:

Part Number	Device Rating/Phase (ARMS)	Inverter Output/Phase (ARMS)	Output Voltage (VRMS)	Output Power (KVA)	PTI Transformers /Leg
DAT210	25.0	15.0	240 / 120	3.6 / 1.8	

Input specifications:

AC input 90 to 264 (VRMS) single-phase, 50/60hz. DC input voltage 120 to 373 (VDC).

DAT210 Inverter Assembly

Please refer to the DAT 210 or SSD 110 manuals for inverter specific installation and operational details.

SECTION 1. REASONS FOR SPECIFYING THE ASSEMBLY

The DAT210 inverter component is designed with a single phase line rectifier providing pulsating direct current (DC) to large input filter capacitors. If the line is connected directly to the line input of the inverter, there will be an initial large inrush current to charge the capacitors. This current is only limited by the mains source (wiring and utility transformers) and filter capacitor internal resistance. The effect is particularly pronounced when the inverter is operated from 240 VAC single or 3 phase at power over 1 KVA.

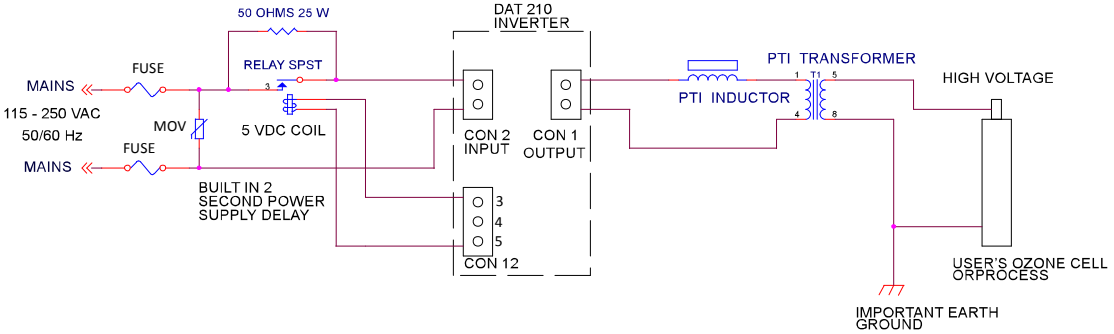
There are three disadvantages to directly connecting the line to the inverter.

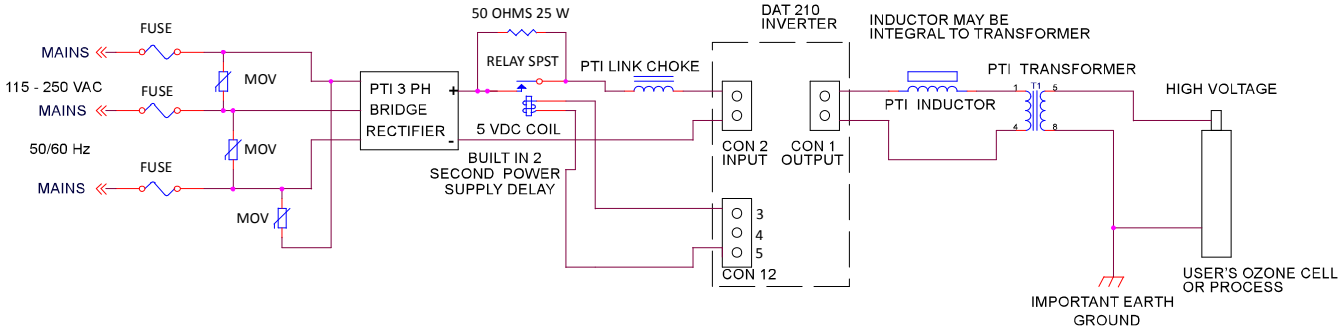
1. High inrush can stress the filter capacitors shortening its life.
2. High inrush currents can stress the safety circuit breakers (and will blow fuses) that may work fine during testing but will deteriorate over time causing nuisance trips.
3. Connecting any rectifier filter capacitor directly to the line causes a strong 3rd harmonic line current causing a 0.6 power factor. Many companies prefer clean (low harmonics) devices in their facility to lessen interference with other more sensitive equipment.

The 70250 inverter assembly solves these problems. A soft-start relay circuit is automatically controlled by the inverter, pre-charge components limit inrush currents and a high current link choke to eliminate the harmonics and correct the power factor to 0.95.

Lastly, the assembly is cost effective by eliminating the need to individually design and mount these essential components.

SECTION 2. Suggested soft start circuits





Circuits are shown for both single phase (top) and three phase inputs (bottom). Components to the right of the inverter are typical ozone generator components.

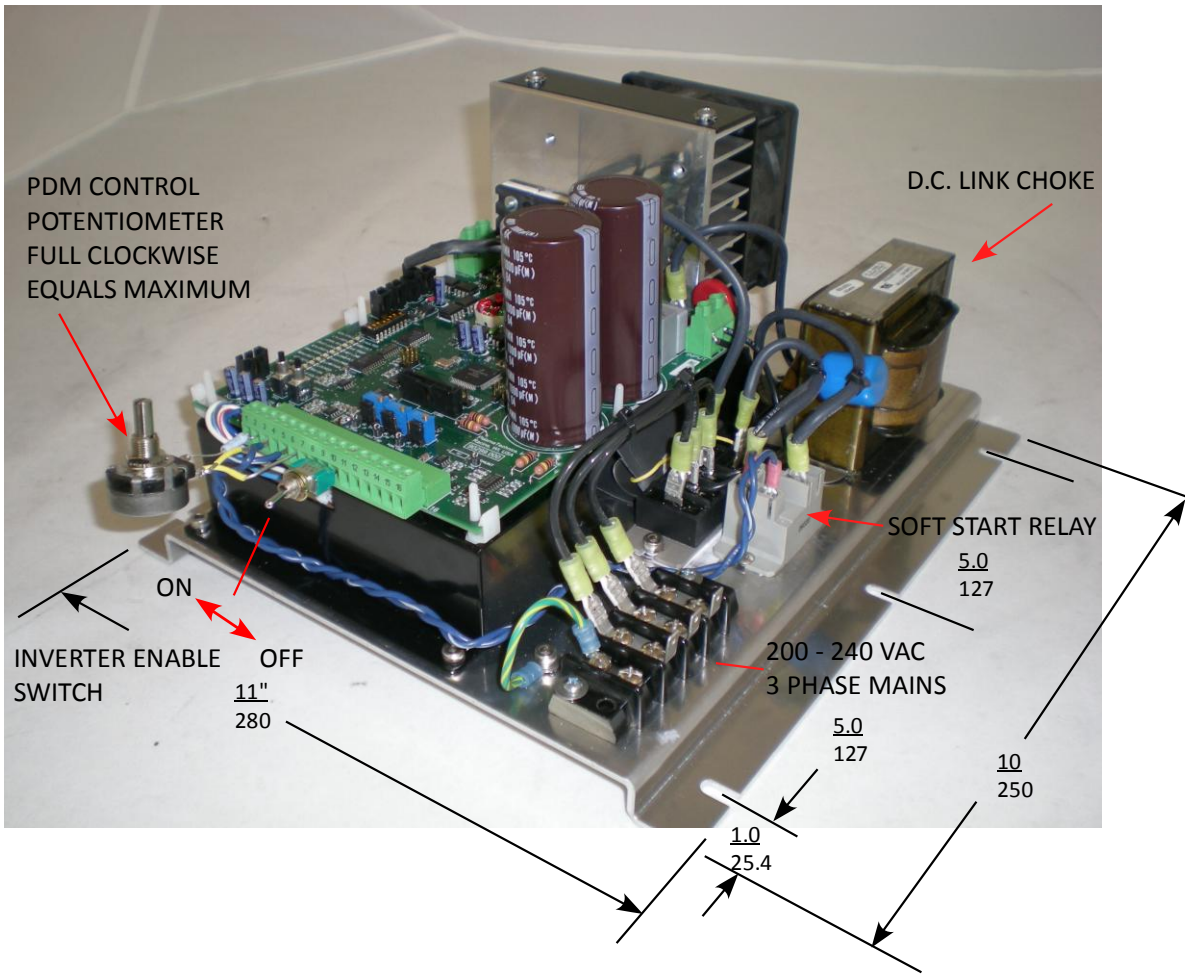
A general rule is to use the three phase circuit if the generator is rated over 2 KW. However this is a matter of individual preference.

Section 3 Bill of Materials

INVERTER 70250 ASSEMBLY

QUANTITY	PART NO.	DESCRIPTION	SOURCE	NOTES
1	U2125A330L	Ceramic surge resistor	HVRA	716.693.4700 www.hvrapc.com
1	W9AS1D52-5	30 Amp 5 VDC coil relay	Magnecraft	866.433.5722 www.alliedelec.com
1	DF30AA160	30 Amp three phase rectifier	SanRex	516.625.1313
1		0.2 uF 1600 VDC/530 VAC capacitor	ASC or PTI	308.284.3611 www.ascapacitor.com
1	235	14 Amp DC link choke (inductor)	PTI	4 KVA maximum
1	237	20 Amp DC link choke (inductor)	PTI	> 4 KVA use the 237
1	DAT210	Inverter to 4 KW	PTI	Purchased separately

Section 4 Dimensions



PLEASE REFER TO THE DAT210 MANUAL
FOR ADDITIONAL DETAIL

P/N 70250 DAT210 INVERTER ASSEMBLY

Features include:

- Soft start feature
- Power factor correction to 0.95 pf
- Prewired
- Extends the filter capacitor life

(3 phase inverter shown)

Section 5

DISCLAIMER

Plasma Technics, Inc®. (PTI) assumes no responsibility or liability for specific applications results. PTI supplies only components for ozone systems and not the complete system. The complete system is the responsibility of the ozone system manufacturer and/or others involved in a specific project.

Plasma Technics, Inc.®

750va / high frequency (5hz to 30khz)

SSD210 – 12DC/AC Inverter

The SSD210 is a new, second-generation, **Pulse Density Modulation (PDM)** enhanced, DC / AC inverter, providing linear plasma control with a turndown to 10%. **Higher power** capacity, enhanced controls and improved internal **fault protection** are the product cornerstones. With double the usable power level of its predecessor, an extended frequency range and onboard controls to simplify installation, the new SSD210 is a great value. An **automatic buss-voltage compensation** circuit stabilizes the high-voltage output. PTI also has specifically designed transformers to mate with the SSD product series, thereby providing a **complete high voltage solution.**

Applications:

- Ozone system variable frequency & voltage drive; NOx Conversion and Eximer Lamp supplies.
- Vehicle power source for plasma-generation pathogen-removal systems.
- Fully equivalent to SSD110 Inputs/Outputs and performance.
- Military applications requiring 400 hz (cycles per second).

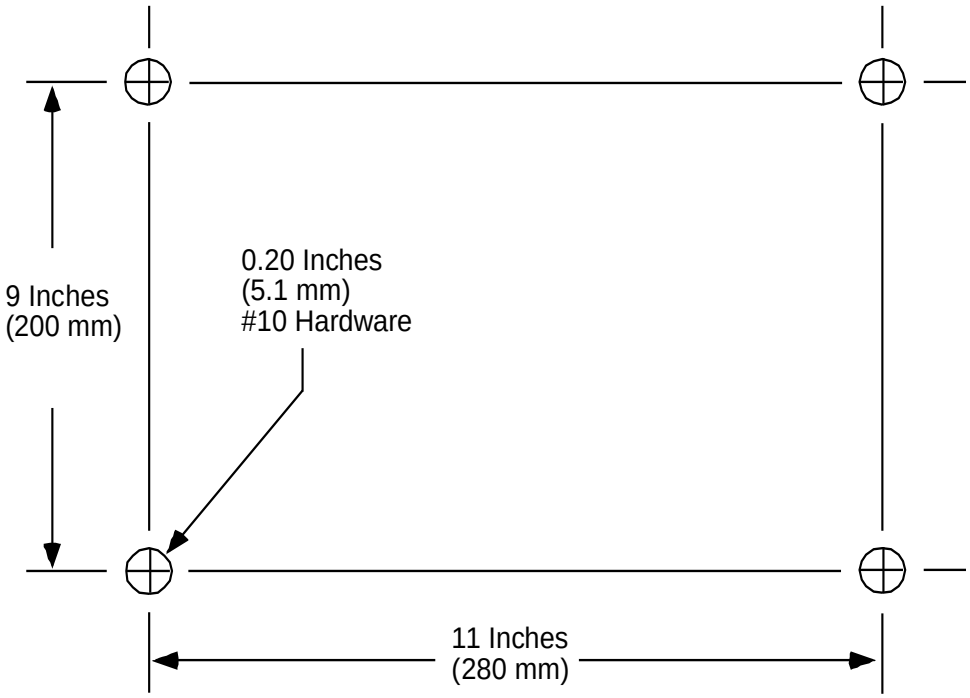
Features:

- **Under-voltage** shutdown and alarm: 10.5vdc; **Over-voltage** shutdown: 15.0vdc.
- DC input from 10.5 to 15vdc; **750w Continuous**, 1kw Burst power (@15vdc).
- **80**% **Efficiency** at nominal 13vdc; Max input current: **75 amps**; **Over-temp**. thermal shutdown.
- **Output regulation 3.5**% with DC input range from 10.5 to 15vdc.
- (PDM) **linear plasma control** vs. command signal.
- Normal frequency range from **5hz to 30khz**, adjustable with 10-turn trimmer.
- Selectable maximum frequency and maximum voltage at desired operating frequency.
- Full pulse-by-pulse current limit control for all power output devices for **reliable operation**.
- **Master/Slave** configuration jumper for multiple unit synchronizing via single controls.
- Selectable **automatic output compensation** for input-line voltage variations.
- Easy and complete computer and PLC interfacing; **4/20ma or 0-10v** for Freq. & PDM.
- Can accommodate either 0-5v or 0-10v full-scale input signal levels.
- Output ON / OFF control using toggle-switch or Push-On / Push-Off buttons.
- Buffered TTL status signals for 'Output Active' and 1x clock for full PLC integration needs.
- An extra-unused op amp is available for customers' custom circuit-tailoring needs.
- Short input power loss **ride-through** stabilizes performance during supply voltage fluctuations.

Controls:

Total flexibility built in. Choose from: Onboard potentiometers, remote pots, 4/20ma or 0-10v control of **PDM** and **Frequency**. Automatic fault shutdown if control loop is broken. A PLC voltage or current source can replace the adjustments normally obtained by potentiometers. Solid-state logic provides safety interlock for ON / OFF and restart lockout in the event of power loss. A user selectable output compensation circuit maintains a relatively constant primary voltage as the input- line voltage fluctuates. Customer configurable op. amp. inputs available at the barrier strip to enable customers the ability to scale, invert, mix and level shift control signals if necessary.

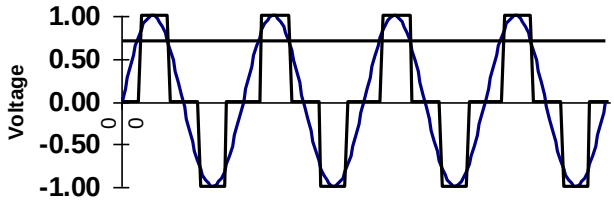
Installation Drawing



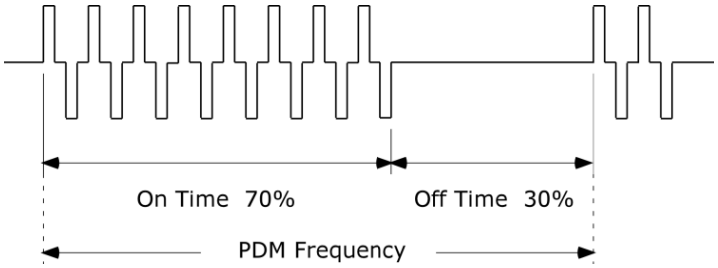
SSD210 Mounting Dimensions

Example SSD210 Outputs:

Full Frequency / Full RMS Voltage



Typical PDM Waveform



Sizing:

Part Number	Inverter Output (ARMS)	Output Voltage (VRMS)	Output Power (VA)	PTI Transformers
SSD210/3	3.0	240	750	1-LHxx102/D115

Input specifications:

DC input 10.5-15v (DC), 75 amps max. : Max operating case temp 85°C.

SSD310 - Solid State Drive

The SSD310 is a new and unique inverter that can provide three single-phase outputs or one three-phase output. PTI has specifically designed transformers to mate with the SSD310 product, thereby providing a **complete high-voltage solution**. The SSD310 can also be driven by a single-phase or a three- phase power line. The supply provides a variable pulse width, modified, four-step output. This control scheme allows the inverter to use the full potential of the IGBTs, by reducing the usual high switching frequency losses. The variable pulse width allows the unit to be run as a Volts-per-Hertz drive. An **automatic buss-voltage compensation** circuit stabilizes the high- voltage output.

Applications:

- Ozone system variable frequency and voltage drive.
- Corona Treatment and Static Eliminator systems.
- High-frequency, high-current supplies for laboratory use.
- Single-phase AC motor supplies and three-phase variable frequency AC motor supplies.
- Military applications requiring 400hz (cycles per second).
- Spindle drive supplies requiring frequencies higher than what normal PWM inverters can supply.
- Single to three-phase output conversion.

Features:

- Normal frequency range of 50hz, adjustable to 20khz. Typical 1khz.
- Selectable maximum frequency.
- Selectable maximum voltage at desired operating frequency.
- Selectable automatic-output compensation for input-line voltage variations.
- Easy and complete computer and PLC interfacing.
- Output ON / OFF control using toggle-switch or Push-On / Push-Off buttons.
- An extra unused op amp is available for customers' custom circuit tailoring needs.
- Built in IGBT protection circuits.
- Short input-power loss ride through.

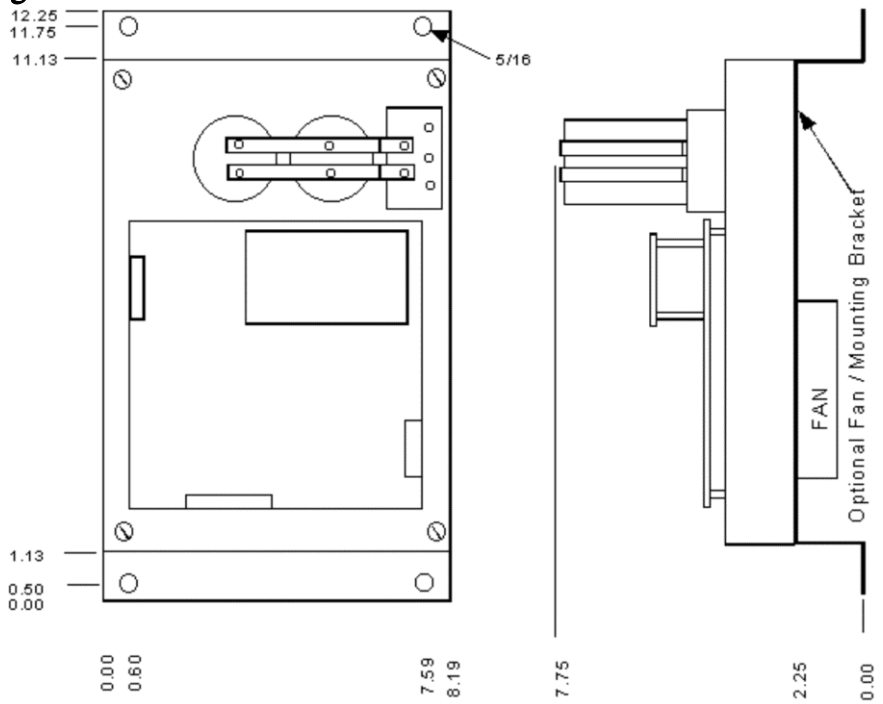
Controls:

The control scheme used in the SSD310 was designed with simplicity in mind. The controls are simple to manufacture, service, repair and understand. A PLC voltage source can replace the adjustments normally obtained by potentiometers. Solid-state logic provides safety interlock for ON / OFF and restart lockout in the event of power loss. A user selectable output-compensation circuit maintains a relatively constant primary voltage as the input-line voltage fluctuates. Customer configurable op. amp. with + and – inputs available at the barrier strip to enable customers the ability to scale, invert, mix and level shift control signals if necessary.

Components:

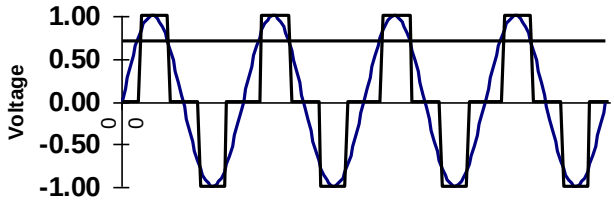
The IGBT is the main component in the system. The newly developed IPM (Intelligent Power Module) was chosen for the SSD310. The IPM requires less circuitry to control the transistors thus reducing manufacturing costs and test time. Other advantages built into the IPMs are short-circuiting protection, over- temperature detection, over-current detection and control-supply under-voltage lockout. All of these fault- protection means are used by the SSD310 to immediately shut down the inverter.

Installation Drawing:

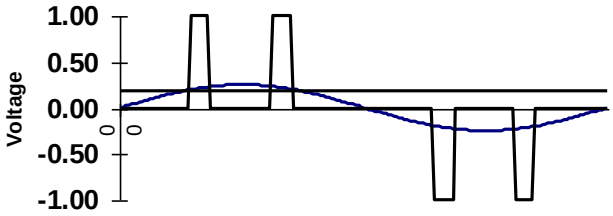


Example SSD310 Outputs:

Full Frequency / Full RMS Voltage



1/4 Frequency / 1/4 RMS Voltage



Sizing:

Part Number	Device Rating/Phase (ARMS)	Inverter Output/Phase (ARMS)	Output Voltage (VRMS)	Output Power (KVA)	PTI Transformers /Leg
SSD310/10	10.0	8.3	240 / 120	3.4 / 1.7	1-HLHxx302/D230
SSD310/20	20.0	16.7	240 / 120	7.0 / 3.5	1-HLHxx302/D230
SSD310/30	30.0	25.0	240 / 120	10.0 / 5.0	2-HLHxx302/D230
SSD310/100	100.0	70.7	240 / 120	24.0 / 12.0	5-HLHxx302/D230

Input Specifications:

AC input 90 to 264 (VRMS) single or three-phase; 50/60hz. DC input voltage 120 to 373 (VDC).

1.1kW – 500kW / *1105 Inverter*

Overview

The 1105 digital AC inverter provides flexible, efficient and cost-effective solutions to a range of control needs. It combines the latest IGBT-based PWM and digital-signal processor technologies with a revolutionary, patented digital-current regulator to deliver optimum performance, full programmability, and simplicity of operation. Compact and rugged, the inverter comes as an open chassis or in a NEMA 4 enclosure. Either type can be foot-mounted to a sub-plate or flange-mounted through a cutout, to dissipate heat outside an enclosure.

Performance Flexibility:
The 1105 offers performance capabilities to suit a broad range of applications where variable-frequency AC or conventional DC inverters are normally used. It can be configured for either constant-load, variable-load, or extended-load applications. A variety of general-purpose and application-engineered software options provide features optimized for specific customer requirements, such as blower and pump motors.

Digital Setup, Easy Operation:
The keypad and liquid crystal display provide a simple interface for setting and viewing operating parameters and diagnostics. All controller settings are made digitally through the keypad. Readouts and fault messages are displayed in plain language. A help feature provides on-line assistance at the touch of a button.

Power Quality:
The 1105 includes a built-in link choke that provides near-unity overall power factor at all motor speeds as well as low harmonic line currents.

Protection and Advanced Diagnostics:
The 1105 monitors its operating conditions and provides a comprehensive set of overload, short circuit, and other protective features. Faults are displayed in plain language along with the operating conditions at the time of occurrence. A log stores the last three faults as well as the buss voltage, motor current, output frequency, operating mode, and time of the most recent fault.

Serial Connectivity:
The 1105 features a fully-isolated EIA RS-422/485 serial interface that allows a process control computer, building automation system, or other host computer to set up, monitor, and control the drive using an ANSI standard protocol. An EIA RS-232 port is also available for direct connection to most types of personal computers. Optional DF1 and RTU protocols allow direct connection to Allen-Bradley and Modicon programmable controllers.

Features & Benefits:

General

- All-digital control for repeatable operation
- 24-bit digital-signal processor (DSP) for fast, dynamic response
- 8 kilobyte battery backup memory for application setup data
- 48 kilobyte scratch pad memory and 1.5 megabyte firmware memory
- Clock/calendar maintains accurate time during power outage
- Sine-coded PWM or modified six-step waveform outputs for improved performance
- High-switching-frequency IGBT devices for smooth, quiet operation
- Digital current regulator for reduced fast response
- Internal control loop for maintaining output during sudden load changes
- Variable frequency control for simple applications
- Integral DC link choke for high power factor and low total harmonic distortion
- Power-loss ride-through for reducing nuisance trips
- Master-slave operation using either analog inputs or high-speed serial link
- User-programmable analog and digital inputs and outputs
- Ideal for applications requiring NEMA 4 enclosures

Ease of Installation, Setup, and Maintenance

- Automated setup features do not require chart recorders or meters
- Software calibration and adjustment eliminates tuning components
- Digital parameter adjustment for precise and repeatable settings
- Software input and output scaling eliminates potentiometers
- Complete, self-contained package requires minimal option boards
- Identical control boards across full power range reduce need for spare parts

Ease of Use

- Touch keypad for easy parameter adjustment and access to displays
- Two-line, descriptive, plain-language display
- Numerical readouts and bar graph display
- Comprehensive fault diagnostics displayed in plain language
- Real-time information and three-fault log
- Optional DriveLink™ software for managing multiple drives from a personal computer

Safe, Reliable Operation

- Extensive electronic protection circuits
- Tolerant of AC line voltage and frequency fluctuations
- Multilevel security code prevents unauthorized parameter changes
- Lockout of local operator controls, for safe remote operation

Electrical:

Input Supply

Voltage:	200 to 240 or 380 to 480 V AC, three-phase Phase sequence insensitive
Voltage tolerance:	–10% of minimum, +10% of maximum
Frequency:	47 to 63 Hz
Power factor:	Displacement: 0.99 at all loads Overall: 0.94 at rated load

Output Rating

Voltage:	Zero to input supply voltage, three-phase
Frequency:	
Switching frequency:	Programmable from 2 to 10 kHz
Modifies six -step frequency:	Programmable from 0 to 10 kHz

Service Conditions

Efficiency:	97% nominal at rated switching frequency
Overload current:	

Environmental

Operating temperature:	32° to 104° F (0° to 40° C)
Storage temperature:	5° to 158° F (–15° to 70° C)
Operating humidity:	95% maximum, non-condensing
Altitude:	To 3,300 ft. (1,000 m) without de-rating

Performance

Frequency Control

Range:	Zero to base speed at full current output
PWM Sinewave	Base speed to 300 Hz at constant power
Six Step	0 to 10 Khz
Resolution:	0.20% with analog input (10-bit) 0.1 Hz with digital input

Inputs and Outputs

Analog Inputs

20 MHz control:	Three (3) 12-bit analog inputs (0 to +10 V DC, ±10 V DC, and 4 to 20 mA)
40 MHz control:	Three (3) 12-bit analog inputs (±10 VDC or 4 to 20 mA)

Analog Outputs

20 MHz control:	Two (2) 12-bit analog outputs (±10 VDC)
40 MHz control:	Two (2) 12-bit analog outputs (±10 VDC and 4 to 20 mA)

Digital Inputs

20 MHz control:	Eleven (11) digital inputs (sink of 1 mA to common)
40 MHz control:	Twelve (12) digital inputs (source of 8 mA from 24 VDC)

Digital Outputs

20 MHz control:	Three (3) standard digital outputs (Form C contact rated 250 VAC @ 5 A, Form A contact rated 250 VAC @ 5 A, and open-collector driver rated 24 VDC @ 500 mA)
40 MHz logic I/O control:	Three (3) digital outputs (Form A contact rated 250 VAC @ 5 A)
40 MHz contact I/O control:	Six (6) alternative digital outputs (open-collector drivers rated 24 VDC@ 500 mA)

Serial Communications

Asynchronous port:	EIA RS-232 and RS-422/485, isolated, 0.3 to 19.2 kbaud ANSI-x3.28-2.5-A4 protocol standard; Optional Allen-Bradley DF1, Modicon RTU, and Johnson Controls N2 protocols
Synchronous port:	EIA RS-485 for high-speed master/slave networking

Typical Parameters and Displays:

Programmable Parameters

- Set point
- Set point minimum
- Set point maximum
- Set point units label,
- Scaling, precision
- Set point source
- (3) skip frequencies
- (3) skip bandwidths
- Minimum / maximum
- Current limit
- Restart retries / delay
- Analog I/O scaling / polarity
- User analog input mode
- User I/O parameter selections
- S-ramp profile smoothing
- Switching frequency
- Master / slave select / source
- Slave ratio / position phasing
- Keypad enable
- Security code

Status Displays

- Buss voltage
- Power factor
- Output current
- Output frequency
- Power consumption
- Energy consumption
- Accumulated thermal load
- Accumulated time run
- Fault log and conditions
- Input status

Protection

- Ground fault
- Output phase-to-phase short circuit
- DC buss over-voltage
- DC buss under-voltage
- Instantaneous over-current
- Output overload
- Heat sink over-temperature
- Ambient over-temperature
- Power transistor fault
- Logic power under-voltage
- Remote command signal loss
- Memory malfunction
- Processor not running fault
- Synchronous serial error

Power Range

Input Voltage	Constant-Torque Applications	Variable-Torque Applications	Extended-Torque Applications
230 VAC	1 1/2-15 hp (1.1-11 kW)	2-20 hp (1.5-15 kW)	—
380 VAC	1 1/2-25 hp (1.1-18 kW)	2-30 hp (1.5-22 kW)	—
460 VAC	1 1/2-25 hp (1.1-18 kW)	2-30 hp (1.5-22 kW)	25-40 hp (18-30 kW)

Consult factory for other powers. Other voltages require appropriate de-rating.

Plasma Technics, Inc.®

PTI 3

50 & 100 watt / 20khz

ET & ETI Series

Electronic OZONE Transformer

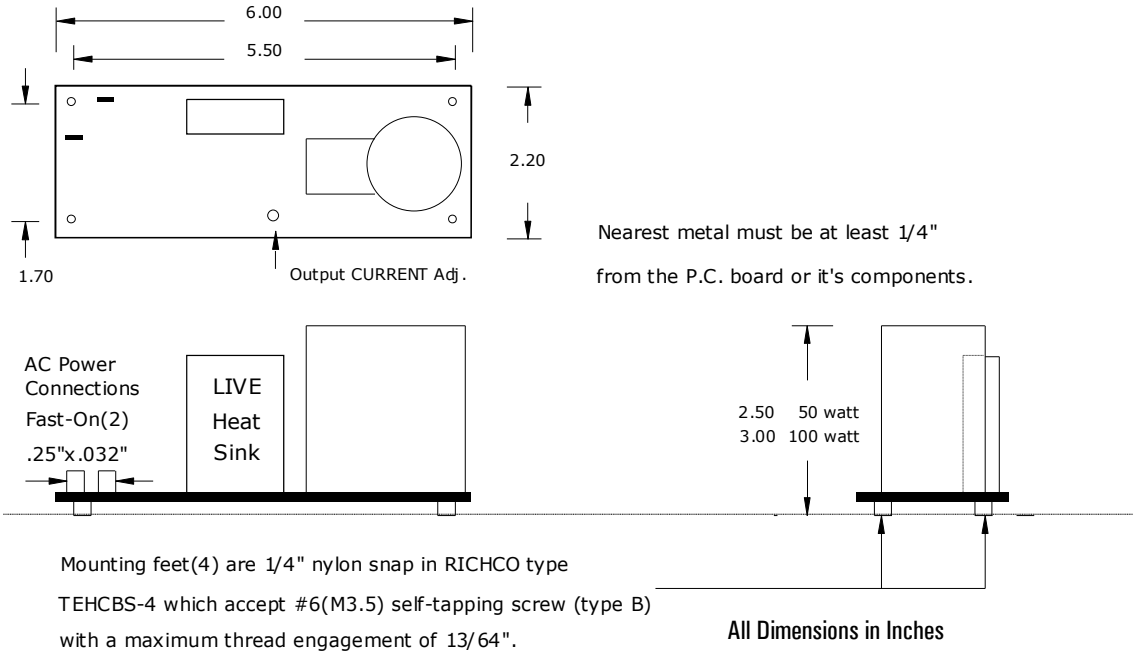
- **20khz design** for **high ozone production** and long service life in severe service applications such as corona discharge ozone generation, electrostatics, and static bars.
- Designed specifically for harsh electrical and environmental demands imposed by **continuous-duty** corona discharge **ozone-** generation and **electrostatic** applications. **UL & CSA Recognized Components.**
- **Silent**, state-of-the-art, **commercial quality**, **patented** design features assure significant increase in operational performance.
- **Cost-effective, field-proven, compact, lightweight** and **high- generation-efficient** design. **1 year limited warranty**.
- Optional **4-20ma Opto-Coupled Interface** to facilitate ORP, PLC and computer control.

Design Features:

- The **complete self-contained package** connects directly to the power line using common spade connectors. Power conversion is accomplished at 20,000hz for **efficient and silent** operation. This **PATENTED** circuit has been verified by an outside laboratory to comply with the most stringent government standards for Radio Frequency Interference **(RFI)** and Electromagnetic Interference **(EMI)**.
- Both the 50 and 100 watt products are **UL & CSA Recognized Components**.
- Output current is **adjustable** via onboard potentiometer. Adjustment has little effect on operating frequency or output voltage.
- An optional **Opto-coupled 4-20ma** (or 0-12vdc) interface enables remote or **PLC** control of the ETs' output current while providing the highest possible **isolation protection** from power line transients. A zero (0) current or broken loop turns the ET off. Onboard jumpers can be strapped to disable the interface board.
- High-voltage output waveform is substantially **sinusoidal**.
- Simple and reliable quick-clip mounting **reduces** the end product **assembly time**.
- Ozone resistant transformer encapsulation ensures long **trouble-free** life in harsh environments.
- This **short-circuit-proof,** current-limiting topology is designed to withstand **continuous operation** in the most demanding of electrical and temperature environments.

- Rigorous 100% performance as well as burn-in tests of all electricals are conducted at elevated operating temperatures to ensure the highest level of product **quality** and **reliability**.
- **Standard configuration:** end point grounded **5kv or 10kv rms voltage** ranges, power **either 50 or 100 watts**. Line voltage models available: **120v 50/60hz.** 220v 50/60hz available on 50watt model only. Midpoint ground and floating secondary configurations on request. Please consult the factory for custom configurations.
- **Separate ground connection** ensures proper grounding to the generator and enclosure.

Installation Drawings



Performance Information

Item	Cat #	Primary Volts/Hz	Max Input VA	Max Input Watts	Sec Kv peak	Shorted Sec MA	Style	Case Size	Weight Lbs(Kg)
1	**ET106051**	120 / 50:60	60	50	6.0	N/A	End Gnd	Above	.45 (.204)
2	**ET104101**	120 / 50:60	120	100	4.0	N/A	End Gnd	Above	.59 (.268)
3	**ET106101**	120 / 50:60	120	100	6.0	N/A	End Gnd	Above	.59 (.268)
4	**ET108101**	120 / 50:60	120	100	8.0	N/A	End Gnd	Above	.59 (.268)
5	**ET110101**	120 / 50:60	120	100	10.0	N/A	End Gnd	Above	.60 (.272)

Due to recent UL approval, the product designations have changed:
ET165 is now ET106051
ET172 is now ET106101

Add $18 for interface option.
Consult factory for pricing and availability of unlisted models. Prices are subject to change without notice.

Plasma Technics, Inc.®

10 watt / med frequency

Solid State OZONE Power Supply

PCB version

- Designed specifically for **under-the-counter** continuous or intermittent duty corona-discharge **ozone**-generation and **electrostatic** applications. Ideal for point of use applications such as small pools, hot tubs, campers, recreational vehicles and yachts.
- State-of-the-art design operates at the nominal frequency of **1khz** and **automatically compensates** for variations in line voltage.
- **Cost effective**, **compact** and **low-voltage** design, intended to simplify the UL approval process.
- **1 year limited warranty**.

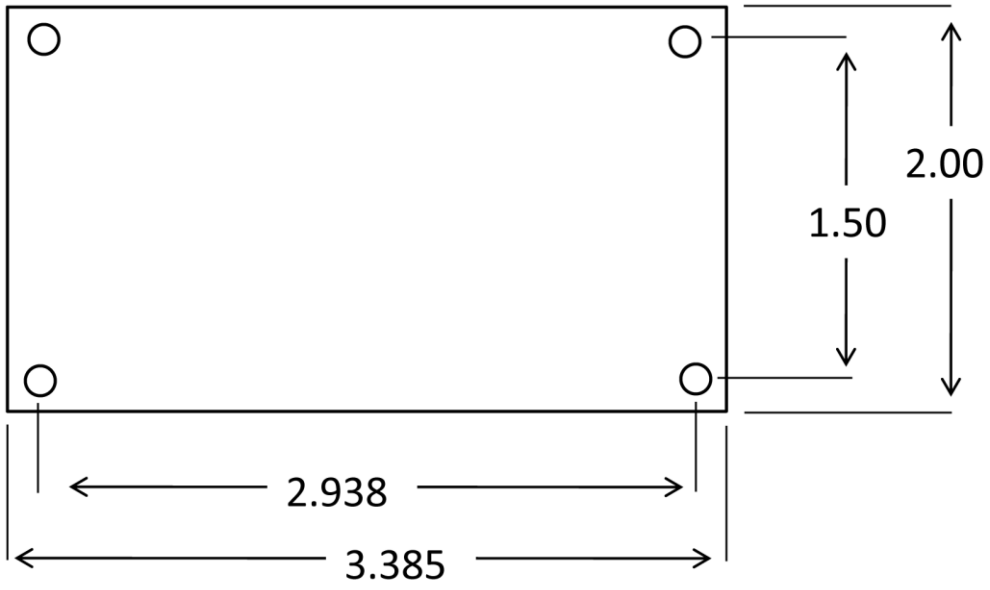
Design Features:

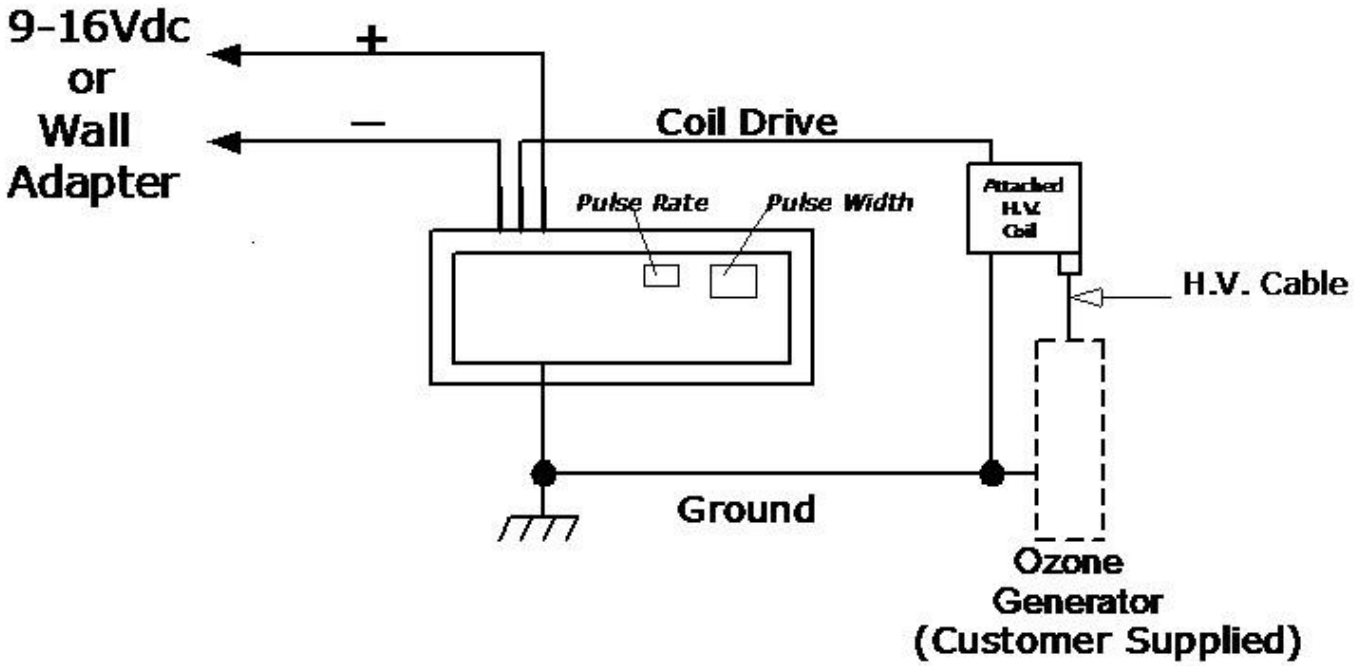
- The **complete package** includes: wall-adapter step-down transformer, complete electronics with automatic line-voltage variation compensation, pulse-width and pulse-rate adjustments, high-voltage pulse coil. The 10-16vdc / 10 watts unit is suitable for typical under-counter uses.
- Low volume orders are supplied with potentiometers' adjustments which **control pulse-width** and **pulse- repetition rate**. The base frequency is **1khz**. Production volumes need not include adjustments, and are **preset to customer specifications**. Best results are achieved using low capacitance ozone generator designs. If silent operation is required and somewhat lower ozone is acceptable, a 10-15khz version is also available.
- **Epoxy-potted** module ensures a long **trouble-free** life in warm, moist environs.
- This **short-circuit-proof** current-limiting module is designed to withstand **continuous operation** in the most demanding of electrical and temperature environs.
- Rigorous 100% performance as well as burn-in tests of all electricals are conducted at elevated operating temperatures to ensure the highest level of product **quality** and **reliability**.
- **Standard configuration** is end point grounded **7.5kv to 10kv peak pulse voltage**. The standard design operates in the range of 10 to 16 volts. Line-voltage transformers available: **120v 50/60hz & 220v 50/60hz** (see back for details). Consult the factory for custom configurations.
- **Separate ground stud** ensures proper grounding to the generator and enclosure.
- **Highly qualified technical support,** with a thorough understanding of ozone applications.
- **Custom** mounting solutions available upon request.

Performance Information

Item	Cat #	Primary Volts/Hz	Max Pri VA	Max Pri Watts	Open Sec KvPk	Shorted Sec MA	Style	Case Size	Weight Lbs(Kg)
1	**HFE109**	120/60	20	15	7.5 to 10	N/A	End Gnd	N/A	1.0 (.5)

HFE109 Dimensions





Plasma Technics, Inc.®

70 - 250 watt / low frequency

Severe-Application Ozone Transformers

- Designed specifically for harsh electrical and environmental demands imposed by **continuous-duty,** corona-discharge **ozone-**generation and **electrostatic** applications. ***UL & CSA Recognized Component***.
- State-of-the-art, **commercial-quality** design features assure a significant increase in operational performance, where standard ignition and neon transformers routinely fail.
- **Cost-effective**, **compact** and **high generation-efficient** design typically capable of supporting twice the ozone generation load of a conventional transformer.

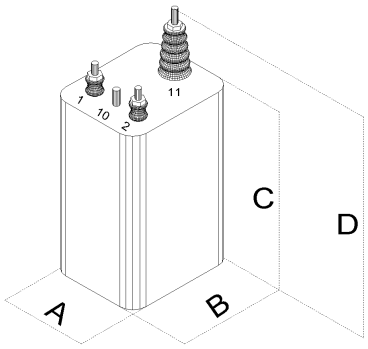
.

Design Features:

- **Hermetic sealing** with a superior grade of liquid encapsulate, introduced under vacuum, surrounds the critical components ensuring a virtual corona free operating environment within the enclosure, and a **long service life**. **2-year limited warranty.**
- This **short-circuit-proof** current limiting transformer is designed to withstand **continuous operation** in the most demanding of electrical and temperature environments.
- All copper windings and a rugged **high-temperature** and high-voltage insulation system, housed in a very compact hermetically sealed enclosure, ensure operation at 85°C.
- **Guaranteed secondary phasing** eliminates high-voltage flash-over between transformers secondary wiring, in systems with multiple transformers.
- Rigorous 100% performance as well as burn-in tests of all electricals are conducted at elevated operating temperatures, to ensure the highest level of product **quality** and **reliability**.
- Custom ceramic high and low-voltage terminations with 10-32 threaded studs enable industry standard **add-on terminations,** such as Rajah (spark plug) and others, to be used.
- **Separate ground stud** ensures proper grounding to the generator and enclosure.
- **Standard configurations** are end and midpoint-grounded **6kv, 8kv, 10kv, 12kv & 15/17kv** units in power ranges from **70 to 250 watts**. Standard designs are **120v/60hz & 220v/50:60hz** (see back for details). Consult the factory for custom configurations.
- **Highly qualified technical support,** with a thorough understanding of ozone applications.

* Optional **dual-positioning,** accessory-mounting brackets available (as shown in illustration). Custom mounting brackets are available upon factory consultation.

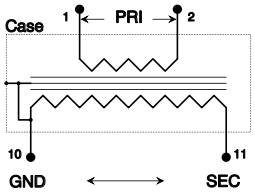
Installation Drawing



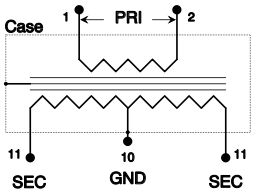
Dimensional Table Inches (mm)

	Case25	Case30	Case35	Case55
A	3 (76)	3 (76)	3 (76)	3.75 (95)
B	3.75 (95)	3.75 (95)	3.75 (95)	4.5 (114)
C	2.5 (65)	4 (102)	5.75(146)	5.75(146)
D	4.25(108)	5.25(133)	7.5 (191)	8 (203)

End Point Ground



Mid Point Ground



Mid Point Style

Mounting Plate

Performance Information

Item	Cat #	Primary Volts/Hz	Max Pri VA	Max Pri Watts	Open Sec KvRMS	Short Sec MA	Style	Case Size	Weight Lbs(Kg)
⇒ 1	**30-10618**	❶120/60	100	70	6	18	End Gnd	30	4.9 (2.2)
⇒ 2	**35-10620M**	❶120/60	215	100	6	20	Mid Gnd	35	6.4 (2.9)
⇒ 3	**35-10820M**	❶120/60	215	100	8	20	Mid Gnd	35	6.5 (2.9)
⇒ 4	**35-10827**	120/60	260	125	8	27	End Gnd	35	6.5 (2.9)
⇒ 5	**35-20827**	220/50-60	260	125	8	27	End Gnd	35	8.0 (3.6)
⇒ 6	**55-LLH08251/D120**	120/240:50-60	330	250	8	48	End Gnd	55	9.0 (4.1)
⇒ 7	**55-LLH10151/S120**	120/50-60	330	250	10	41	End Gnd	55	9.0 (4.1)
⇒ 8	**35-11023**	120/60	260	125	10	23	End Gnd	35	6.6 (3.0)
⇒ 9	**35-21023**	220/50-60	260	125	10	23	End Gnd	35	8.1 (3.7)
⇒10	**35-11218**	120/60	260	125	12	18	End Gnd	35	6.6 (3.0)
⇒11	**35-21218**	220/50-60	260	125	12	18	End Gnd	35	8.1 (3.7)
12	**55-11828**	120/60	535	150	18	28	End Gnd	55	11.5 (5.2)

⇒ c UL us UL & CSA Recognized Component, ❶ Suitable for 400hz operation.

Transformers

Plasma Technics, Inc.®

50 - 250 watt / med frequency

Solid State Transformers

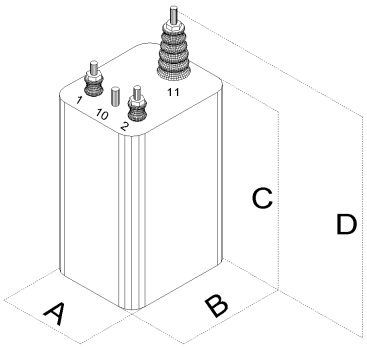
- Designed specifically for harsh electrical and environmental demands imposed by **continuous-duty, high-frequency,** corona- discharge, **ozone**-generation and **electrostatic** applications.
- State-of-the-art, **commercial-quality** design features assure a significant increase in operational performance where standard automotive ignition coils routinely fail.
- **Cost-effective**, **compact** and **high generation-efficient** design typically capable of supporting twice the ozone generation load of a conventional transformer.
- **Hermetically sealed** for long service life in severe service applications, such as corona-discharge, ozone-generation, electrostatics and static bars. **2-year limited warranty**.

Design Features:

- **Hermetic sealing** with a superior grade of liquid encapsulate, introduced under vacuum, surrounds the critical components ensuring a virtual corona free operating environment within the enclosure, and a **long service life**. **2-year limited warranty.**
- **Consistent performance,** high loading capacity and long life -- unlike automotive coils.
- All copper windings and a rugged **high-temperature**, high-voltage insulation system, housed in a very compact, hermetically-sealed, deep drawn enclosure.
- **Guaranteed secondary phasing** eliminates high-voltage flash-over between transformers and secondary wiring in systems with multiple transformers.
- Rigorous 100% performance as well as burn-in tests of all electricals are conducted at elevated operating temperatures to ensure the highest level of product **quality** and **reliability**.
- Custom ceramic high and low-voltage terminations with 10-32 threaded studs enable industry standard **add-on terminations,** such as Rajah (spark plug) and others, to be used.
- **Separate ground stud** ensures proper grounding to the generator and enclosure. Primary and secondary are electrically independent.
- **Standard voltage configurations** are end point grounded and are modeled after the highest energy automotive racing designs. Models for frequency: **ranges 400hz - 2khz and 2khz - 15khz**. Standard designs are based on low voltage primary (see back for details). Consult the factory for alternate configurations and voltages.
- **Highly qualified technical support** with a thorough understanding of ozone applications.

* Optional **dual-positioning,** accessory-mounting brackets available (as shown in illustration). Custom mounting brackets are available upon factory consultation.

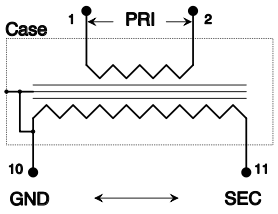
Installation Drawing



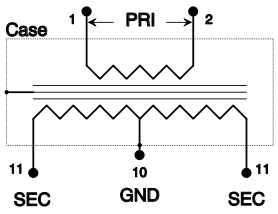
Dimensional Table Inches (mm)

	Case25	Case30	Case35	Case55
A	3 (76)	3 (76)	3 (76)	3.75 (95)
B	3.75 (95)	3.75 (95)	3.75 (95)	4.5 (114)
C	2.5 (65)	4 (102)	5.75(146)	5.75(146)
D	4.25(108)	5.25(133)	7.5 (191)	8 (203)

End Point Ground



Mid Point Ground



Mid Point Style

Mounting Plate

Performance Information

Item	Cat #	Turns Ratio	Max Pri Amps	Primary L / Ω	Primary Leakage Reactance	Max Kv / Watts	Freq Range Khz	Style	Case Size	Weight Lbs(Kg)
1	**HFF106**	120/1	5a	.73mh/.02	10µh	**25/75**	**1 - 15**	End Gnd	25	2.0 (0.9)
2	**HFT107**	58/1	5a	.44h/2.58	9.1mh	**25/100**	**.4 – 2**	End Gnd	35	4.0 (1.8)
3	**SP225**	50/1	3	2.8mh/.19	.36mh	**10/250**	**1 – 10**	Isolated/ End	30	3.3 [1.5]

Maximum case temperature for all models is 85°c.

Transformers

Severe Application - Ozone Transformers

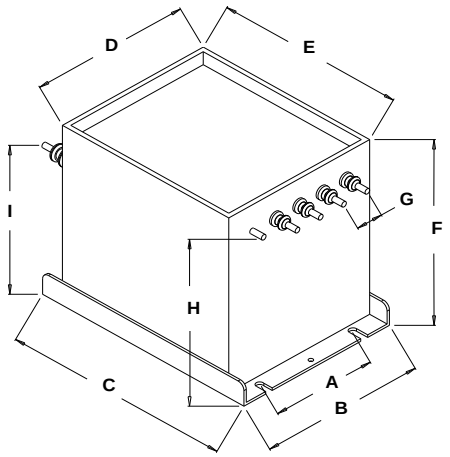
UL & CSA Recognized Component.

- **Increased Ozone production** as a result of matching transformer designs with the capacitive ozone load. This yields greater ozone production with lower primary input current, reduced package size, and competitive over-all cost.
- Designed specifically for harsh electrical and environmental demands imposed by **continuous-duty,** corona-discharge, **ozone** generation, and **electrostatic** applications.
- State-of-the-art, **commercial-quality** design features assure significant increase in operational performance, where standard air type transformers routinely fail.
- **Cost-effective**, **compact** and **high generation-efficient** design, typically capable of supporting twice the ozone-generation load of a conventional transformer.

Design Features:

- **High-voltage, factory standard, output-voltage configuration** available, includes **4kv 6kv, 8kv, 10kv, 15kv and 25kv**. The **end point ground** designs range in frequency from **50hz to 2khz** with power levels from **1kva to 12kva**. Typical primary configurations: **120/240, 230/460**. Consult the factory for alternate configurations and voltages.
- Feature Enhanced Case110 series incorporates **isolated secondary winding** which allows the end point ground current to be safely measured; **protected** terminals; **spade push-on** connectors for primary connections; and, a **low-profile** enclosure.
- **Hermetic sealing** with a superior grade of liquid encapsulate, introduced under vacuum, surrounds the critical components ensuring a virtual corona free operating environment within the enclosure, and a **long service life**. **2-year limited warranty.**
- Line-frequency transformers are **short-circuit-proof,** current-limiting designs, to withstand operation in the most demanding of electrical and temperature environments.
- All copper windings, and a rugged, **high-temperature**, high-voltage insulation system, housed in a very compact, hermetically-sealed enclosure.
- **Guaranteed secondary phasing** eliminates high-voltage flashover between transformers and secondary wiring in systems with multiple transformers.
- Rigorous 100% performance as well as burn-in tests of all electricals are conducted at elevated operating temperatures, to ensure the highest level of product **quality** and **reliability**.
- Custom ceramic high and low-voltage terminations with 10-32 threaded studs, enable industry standard **add-on terminations** such as Rajah (spark plug) and others to be used.
- **Separate ground stud** ensures proper grounding to the generator and enclosure.

Installation Drawing



Dimensional Table Inches (mm)

	Case100	Case110	Case200	Case300	Case400
A	4 (102)	5 (127)	5 (127)	6 (152)	8 (203)
B	6.13(156)	7.63 (194)	7.5 (191)	9.13 (232)	11.25(286)
C	8.63(219)	10.80(274)	9.5 (241)	10.63(270)	15.13(384)
D	5.88(149)	7.35 (187)	7.25(184)	8.88 (225)	10.88(276)
E	7 (178)	9.30 (236)	8 (203)	9 (229)	12.63(321)
F	7.13(181)	5.95 (151)	9 (229)	10.63(270)	13 (330)
G	1 (25)	.88 (22)	1 (25)	1.25 (32)	1.5 (38)
H	6 (152)	4.07 (103)	7.5 (191)	9 (229)	11.38(289)
I	4.63(118)	4.07 (103)	6 (152)	8.13 (206)	10.38(264)
Mt	8 (203)	10 (254)	9 (229)	10 (254)	14.38(365)

Mt = bolt mounting center; mounting slot designed for ¼-20 bolt for all except the Case400, which is 3/8"; H.V. terminal is 1 ¼" to 1 ½" from left side, as shown above. All terminals use 10-32 nuts. High-voltage terminal extends the 'E' dimension by: <12kv 1 ¾", <20kv 2 ¼", <30kv 3 ¾"

Performance Information

Item	Catalog #	Primary Volts / Hz	Max KVA	Output KvRMS	Sec MA	Style	Case Size	Weight Lbs(Kg)
⇒ 1	**300-LLHI06402/D220**	220/440:50-60	**4**	**6**	500	End Gnd	300	113 (51)
⇒ 2	**110-LLHI08122/D115**	115/230:50-60	**1.2**	**8**	150	End Gnd	110	49 (22)
⇒ 3	**200-LLHI08242/D220**	220/440:50-60	**2.4**	**8**	300	End Gnd	200	74 (34)
⇒ 4	**110-LLHI10122/D115**	115/230:50-60	**1.2**	**10**	120	End Gnd	110	49 (22)
⇒ 5	**100-LLH10122/T220**	220/240/260:50-60	**1.2**	**10**	120	End Gnd	100	44 (20)
⇒ 6	**200-LLH10242/D220**	220/440:50-60	**2.4**	**10**	240	End Gnd	200	74 (34)
⇒ 7	**300-LLH10402/D220**	220/440:50-60	**4**	**10**	400	End Gnd	300	113 (51)
⇒ 8	**110-LLHI15122/D120**	120/240:50-60	**1.2**	**15**	85	End Gnd	110	46 (21)
⇒ 9	**200-LLH25062/D120**	120/240:50-60	**.6**	**25**	24	End Gnd	200	70 (32)
⇒10	****55-MLH04501/T100**	*160 : 1.2khz	**1**	**4**	250	End Gnd	55	17 (8)
⇒11	****55-HLH06102/D115**	* 115/230:1.2khz	**1**	**6**	167	End Gnd	55	17 (8)
⇒12	**100-HLH06302/D230**	* 230/460:1.2khz	**3**	**6**	500	End Gnd	100	40 (18)
⇒13	**300-HSHI06802/D230**	* 230/460:1.2khz	**8**	**6**	1400	End Gnd	300	136 (62)
⇒14	**400-HSHI06123/D230**	* 230/460:1.2khz	**12**	**6**	2100	End Gnd	400	225(102)
⇒15	**100-HLH08302/D230**	* 230/460:1.2khz	**3**	**8**	375	End Gnd	100	40 (18)
⇒16	**** 55-HLH10102/D115**	* 115/230:1.2khz	**1**	**10**	100	End Gnd	55	17 (8)
⇒17	**100-HLH10302/D230**	* 230/460:1.2khz	**3**	**10**	300	End Gnd	100	40 (18)
⇒18	**300-HLHI10602/D230**	* 230/460:1.2khz	**6**	**10**	600	End Gnd	300	136 (62)

⇒ c UL us UL & CSA Recognized Component.

Product with letter 'I' in the sales code is isolated secondary ground type.

* Hz is nominal, ± 50% frequency with 100% VA rating ; max case temp 65°C.

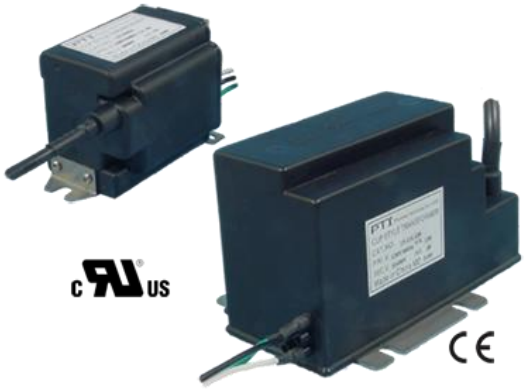
** See '70 – 150va / low frequency data sheet for dimensional table.

Transformers

Plasma Technics, Inc.®

35-150 watt / low frequency

Severe-Application Ozone Transformers



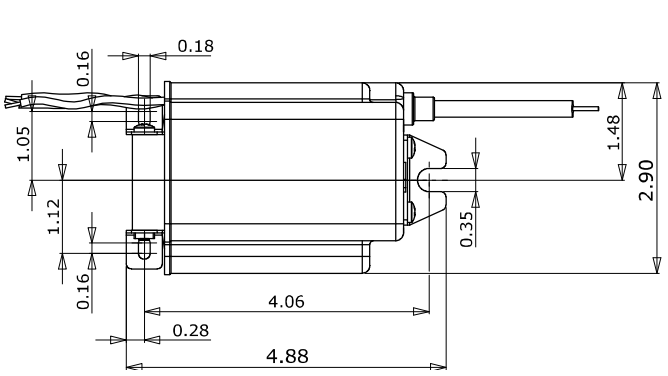
- Designed specifically for harsh electrical and environmental demands imposed by **continuous-duty,** corona-discharge, **ozone**-generation, and **electrostatic** applications. ***UL and CSA Recognized Component.***
- Completely sealed for Maximum Life, and Resistance to harsh environments, **the** design features assure a significant increase in operational performance where standard ignition and neon transformers routinely fail.
- **Cost-effective**, **compact** and **high generation-efficient** design, typically capable of supporting twice the ozone generation load of a conventional transformer.
- **Vacuum impregnation-sealed** for long service life in severe service applications such as corona-discharge, ozone-generation, electrostatics, and static bars. **2-year limited warranty** for all applications including corona-discharge ozone generation.

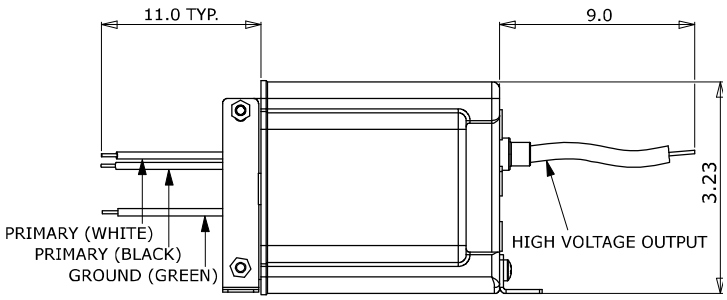
Design Features:

- Complex **impregnation** and premium materials surround the critical components, ensuring a virtual corona-free operating environment within the enclosure, and a **long service life** that rivals oil.
- This **short-circuit-proof,** current-limiting transformer is designed to withstand **continuous operation** in the most demanding of electrical and temperature environs.
- All copper windings, a rugged **high-temperature** and high-voltage insulation system, housed in a very compact, vacuum- sealed enclosure, ensure operation at 65°C.
- **Separate ground wire** ensures proper grounding to the generator and enclosure.
- **Standard KV configurations** are end point ground **4, 5, 6.5, 7.1, 8.5, 10, 11.4** units in power ranges from **35 to 150 watts**. Standard designs are **120v/60hz & 220v/50:60hz.** Consult the factory for custom configurations.
- All mounting brackets are **Stainless Steel.**
- Premium high-voltage wire for ***Maximum Life***.
- Custom terminations and wire lengths upon request.
- **Highly qualified technical support** with a thorough understanding of ozone applications.

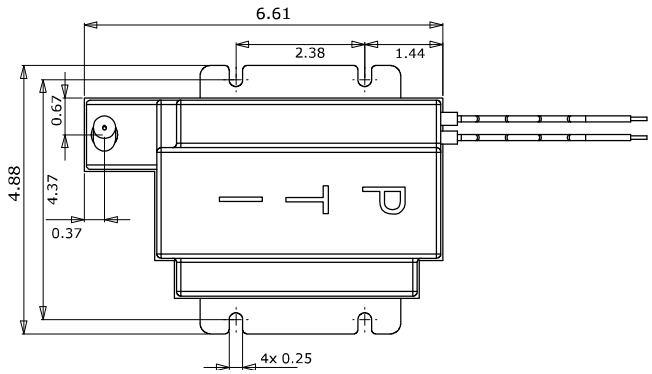
Installation Drawing Dimensional Table Inches

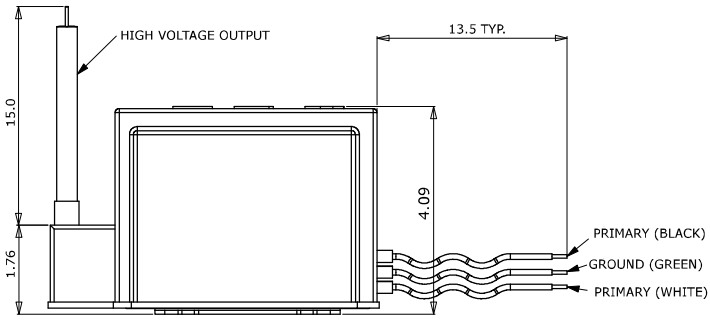
Cup 12 series:





Cup 15 series:





Transformers

Schematic for Case 15 Dual Voltage Model

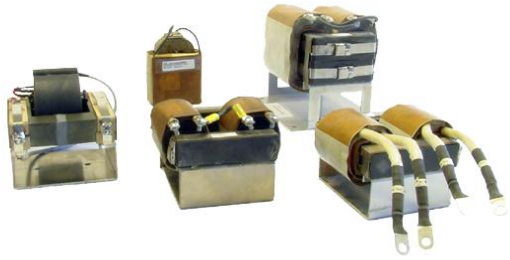
Performance Information

Item	Cat #	Primary Volts/Hz	Max Pri VA	Typical Loaded Watts	Open Sec KvRMS	Short Sec MA	Style	Case Size	Weight Lbs(Kg)
1	**12-103.510**	120/60	55	**40**	**3.5**	10	End Gnd	12	4.2 (1.9)
2	**12-10416**	120/60	60	**40**	**4**	16	End Gnd	12	4.2 (1.9)
3	**12-20416**	230/50-60	60	**40**	**4**	16	End Gnd	12	4.2 (1.9)
4	**12-10510**	120/60	80	**40**	**5**	10	End Gnd	12	4.2 (1.9)
5	**12-106.510**	120/60	115	**40**	**6.5**	10	End Gnd	12	4.2 (1.9)
6	**12-206.510**	230/50-60	130	**35**	**6.5**	10	End Gnd	12	4.2 (1.9)
7	**15-304.256**	115/230 /50-60	280	**150**	**4.2**	56	End Gnd	15	9.0 (4.0)
8	**15-307.130**	120/230 /50-60	230	**150**	**7.1**	30	End Gnd	15	9.0 (4.0)
9	**15-108.527**	120 / 50-60	225	**150**	**8.5**	27	End Gnd	15	9.0 (4.0)
10	**15-310.030**	120/230:50-60	310	**150**	**10**	30	End Gnd	15	9.0 (4.0)
11	**15-311.420**	120/230 /50-60	293	**150**	**11.4**	20	End Gnd	15	9.0 (4.0)

⇒ c UL us All Above; Specials and wire configuration available upon request.

500 - 20kva, 1 kHz to 35 kHz

Resonant System Components

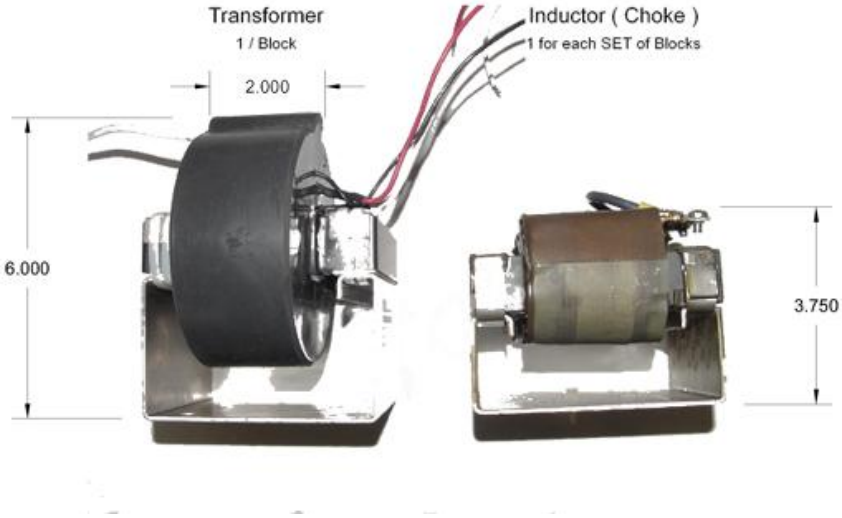


- Designed to provide maximum efficiency by allowing **digital** pulse drive by SSD and ATI series inverters. Magnets package converts pulse waveform to sine wave on cells for energy-efficient operation.
- Designed specifically for harsh electrical and environmental demands imposed by **continuous-duty, high-frequency,** corona- discharge **ozone, plasma** generation, and **electrostatic** applications.
- **Cost-effective**, **compact** and **high generation-efficient** design typically capable of supporting twice the ozone generation load of conventional components.

Design Features:

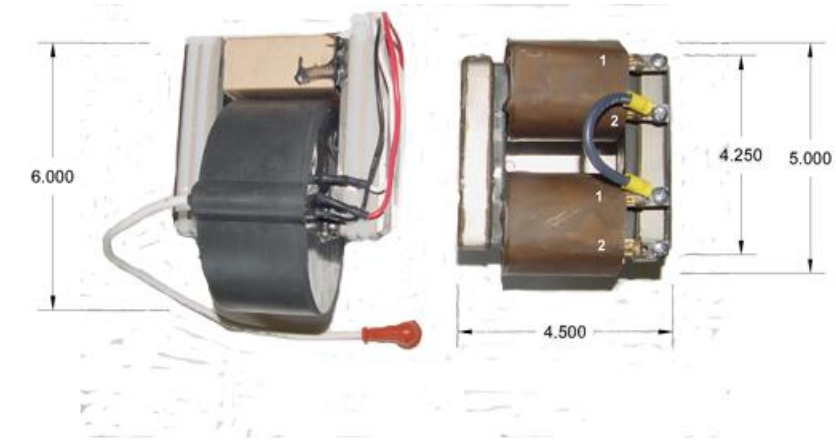
- Dry type of encapsulation provides the highest reliability in harsh increments, second to liquid filled.
- Design uses the finest high-quality material for maximum performance and efficiency.
- Chokes are strap able for dual-voltage operation.
- Package design intended for continuous operation with high power-factor plasma loads.
- Integral aluminum mounting brackets facilitate quick installation.
- Chokes are class 'H' for maximum durability and safe operation in the highest certified thermal settings.
- **Consistent performance,** high loading capacity and long life.
- All copper windings, and a rugged, **high-temperature**, high-voltage insulation system.
- Rigorous 100% performance as well as burn-in tests of all electricals are conducted at elevated operating temperatures to ensure the highest level of product **quality** and **reliability**.
- **Highly qualified technical support** with a thorough understanding of ozone and plasma applications.

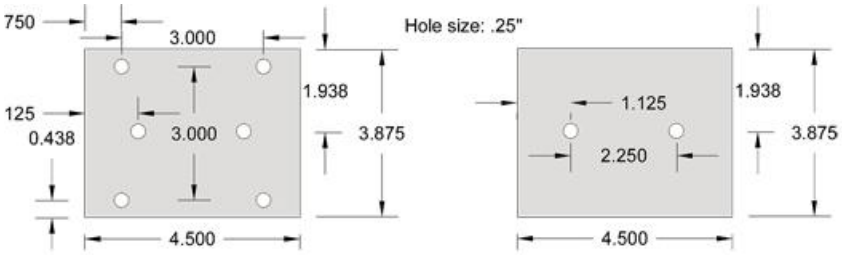
Installation Drawing Dimensional Table Inches



Primary: Red, White
Secondary Ground: Black
Secondary High Voltage: White Silicon

Series Inductance, as shown (2 to 1) = x
Parallel Inductance, (1 to 1, 2 to 2) = x/4





Performance Information:

Inductors

Item	Cat #	Max Pri *Amps	Primary L	Freq Range Khz	Voltage Drop
1	**SP223-1**	10 / 5	.3mh / 1.2mh	**5 – 25**	400 / 800
2	**SP206-1**	60	27mh / 106µh	**1-25**	50 / 100
3	**SP242-2**	10	5mh	**1-10**	800
4	**SP242-3**	10	10mh	**1-10**	800
5	**SP252-2**	10 / 5	5 / 20mH	**1-10**	350 / 700
6	**SP221-1**	50 / 25	.9 / 3.8mh	**1-15**	400 / 800
7	**SP221-2**	40 / 20	1.25 / 5.0mh	**1-15**	400 / 800
8	**SP221-3**	50 / 25	1.03 / 4.1mh	**1-15**	400 / 800
9	**SP305-1**	10 / 20	.187 / 750mh	**5 – 25**	400 / 800
10	**SP305-2**	10 / 20	.3 / 1.2mh	**5 --25**	400 / 800

* Values listed above, Configured in Parallel / Series.

Transformers

Item	Cat #	Secondary Kv	Freq Range Khz	VA	Inverter AC Input
1	**SP223**	**5.5**	5-25	1000	240
2	**SP238**	**5.5**	5-25	350	240
3	**SP288-1**	**7.5**	10-20	2000	240
4	**SP239**	**10**	5-25	350	240
5	**SP242**	**10**	1-10	1800	120
6	**SP252**	**5**	1-2	1800	240/480
7	**SP236**	**10**	5-25	1000	240
8	**SP234**	**12**	5-25	1000	240
9	**SP216**	**15**	5-25	1000	240
10	**SP237**	**15**	5-25	1500	240

Consult factory for pricing and availability of unlisted models. Prices are subject to change without notice.